



- 16 One serving of Mike's crackers has 150 calories and a mass of 30 grams. How many calories are in 6 grams of the crackers?
- A 5
 - B 10
 - C 25
 - D 30
- 17 The ratio of nitrogen to potassium in a sample of soil is 12:9. The sample has 36 units of nitrogen. How much potassium does the sample have?
- A 21 units
 - B 27 units
 - C 33 units
 - D 48 units
- 18 To clean a tank, $\frac{3}{4}$ cup of disinfectant is needed for every 2 gallons of water. How many cups of disinfectant are needed for 20 gallons of water?
- A $7\frac{1}{2}$
 - B 15
 - C $22\frac{1}{2}$
 - D 30



- 19 A laundry detergent is sold at four stores.

Store	Size (ounces)	Price
Hawkin's Store	60	\$6.50
Don's Store	54	\$5.50
Allen's Market	48	\$5.61
Value Market	40	\$4.50

Which store has the lowest price per ounce?

- A Hawkin's Store
- B Don's Store
- C Allen's Market
- D Value Market

- 20 Marcy is taking two types of medicine.

- She takes one medicine every 6 hours.
- She takes the other medicine every 4 hours.
- She takes both medicines at 9:00 a.m.

At what time will Marcy take both medicines together again?

- A 1:00 p.m.
- B 3:00 p.m.
- C 5:00 p.m.
- D 9:00 p.m.



- 21 Jeff recorded the average temperatures for six months. He will display the temperatures on a number line.

Month	Temperature ($^{\circ}\text{F}$)
December	-5
January	-16
February	-15
March	20
April	24
May	35

On the number line, which month's temperature will be between February's and March's temperatures?

- A December
- B January
- C April
- D May
- 22 A trapezoid in a coordinate plane has vertices $(-2, 5)$, $(-3, -2)$, $(2, -2)$, and $(1, 5)$. What is the height of the trapezoid?
- A 3 units
- B 5 units
- C 7 units
- D 9 units



- 23 Which can be represented by the expression $17 - 2x$?
- A 17 less than twice a number x
 - B the difference between 17 and twice a number x
 - C a number x squared, subtracted from 17
 - D 17 less than a number x squared
- 24 Which expression is equivalent to $5y + 2y + 6x + 2y - x$?
- A $5x + 6y$
 - B $5x + 7y$
 - C $5x + 9y$
 - D $7x + 7y$
- 25 Diana can use the equation $y = 7x$ to calculate her pay, where y represents the amount of pay, and x represents the number of hours worked. How many hours did Diana work if she was paid \$45.50?
- A 5.5 hours
 - B 6 hours
 - C 6.5 hours
 - D 7 hours



26 If $y - 18 = 14$, what is the value of $3(y + 5)$?

- A 27
- B 32
- C 96
- D 111

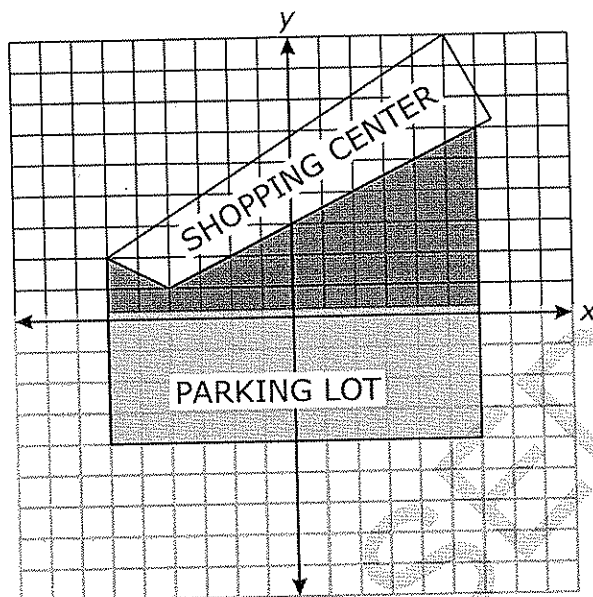
27 Karen recorded her walking pace in the table below. What equation **best** represents this relationship?

Hours Walked (h)	Miles Walked (m)
2.5	8.75
4	14

- A $h = m + 10$
- B $h = 3.5m$
- C $m = h + 10$
- D $m = 3.5h$



- 28 The shaded area indicates the parking lot at a shopping center.

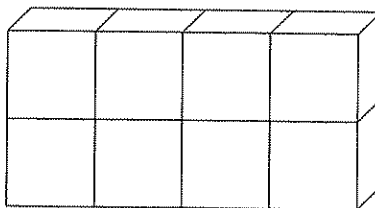


What is the total area of the parking lot?

- A 72 units²
- B 86 units²
- C 91 units²
- D 120 units²



- 29 The right rectangular prism below is made up of 8 cubes. Each cube has an edge length of $\frac{1}{2}$ inch.

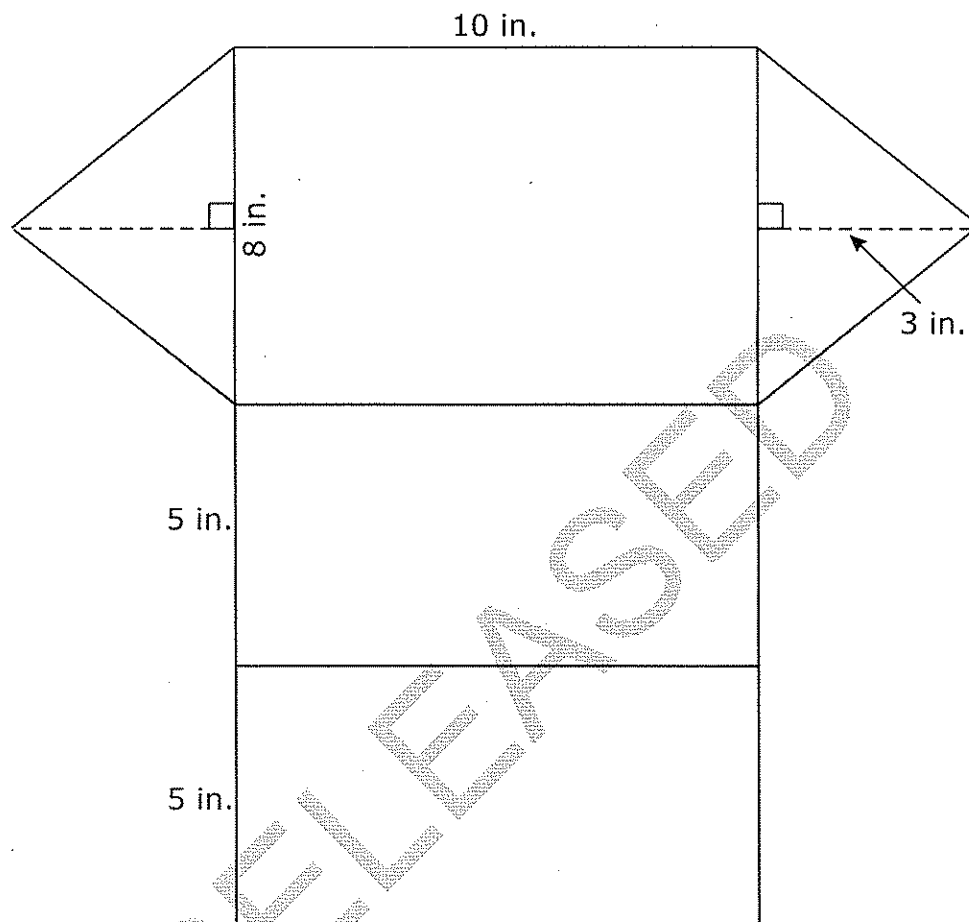


What is the volume of this prism?

- A 1 cubic inch
 - B 2 cubic inches
 - C 4 cubic inches
 - D 8 cubic inches
- 30 What is the area of the quadrilateral with vertices at $(-1, 0)$, $(2, 0)$, $(2, 5)$, and $(-1, 5)$?
- A 15 square units
 - B 12 square units
 - C 10 square units
 - D 5 square units



- 31 The net of a triangular right prism is shown below.



What is the surface area of the prism?

- A 204 in.²
- B 228 in.²
- C 240 in.²
- D 288 in.²



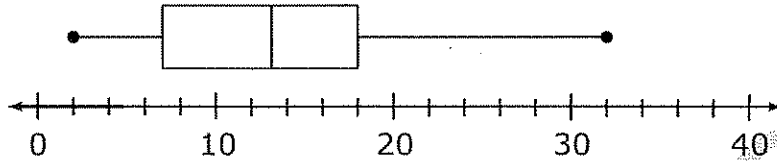
- 32 The data below represents the numbers of books that twelve students read.

2, 4, 7, 8, 9, 12, 14, 18, 19, 21, 30, 32

Which box plot correctly summarizes the data?

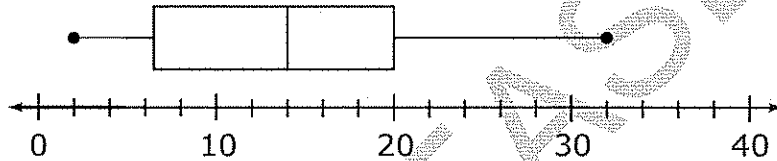
A

Numbers of Books



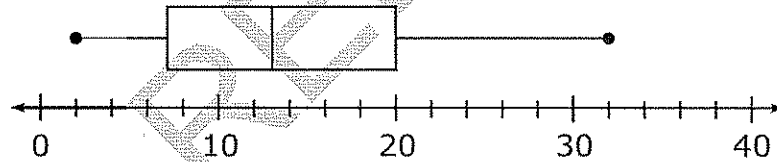
B

Numbers of Books



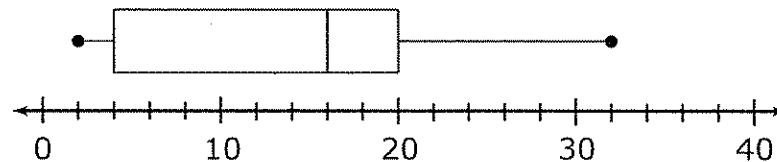
C

Numbers of Books



D

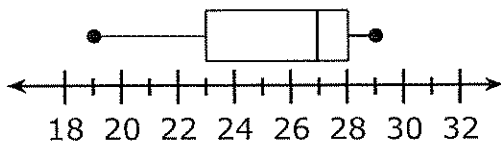
Numbers of Books



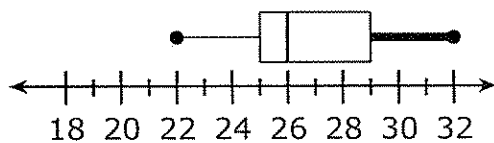


33 Which box plot represents a set of data with the largest interquartile range?

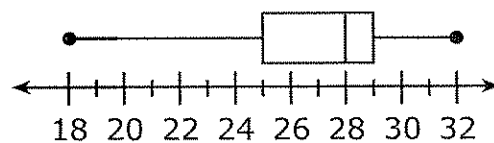
A



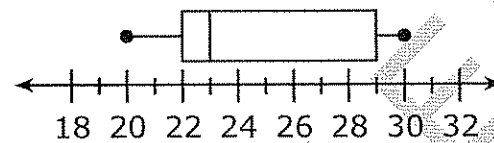
B



C



D

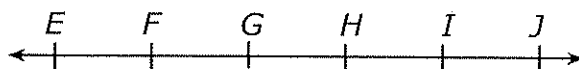


34 A company that makes boxes finds that 3 out of 20 boxes are damaged. What percent of the boxes are damaged?

- A 12%
- B 15%
- C 25%
- D 34%



- 35 Jack drew a number line on his paper.



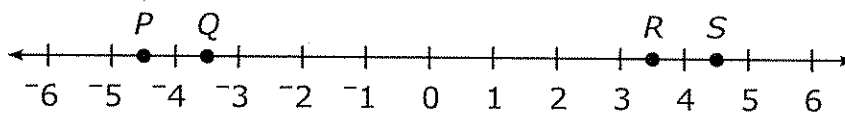
Jack drew a new point 45% of the distance from point *E* to point *J*. Between which two letters does the new point lie?

- A *G* and *H*
- B *I* and *J*
- C *F* and *G*
- D *H* and *I*

- 36 Valerie is 64 inches tall. **About** how many centimeters tall is Valerie? (1 inch \approx 2.5 centimeters)

- A 25.6
- B 30.6
- C 160
- D 180

- 37 Which point on the number line represents the number $-4\frac{1}{2}$?



- A *P*
- B *Q*
- C *R*
- D *S*



- 38 This table shows the number of miles four friends travel to get to school.

Student	Distance to School (miles)
Andie	$1\frac{3}{8}$
Helen	$1\frac{2}{3}$
Michelle	$1\frac{5}{9}$
Troy	$1\frac{4}{9}$

Who travels the greatest distance to school?

- A Andie
- B Helen
- C Michelle
- D Troy

- 39 In the coordinate plane, what is the distance between $(-3, 5)$ and $(-3, -8)$?

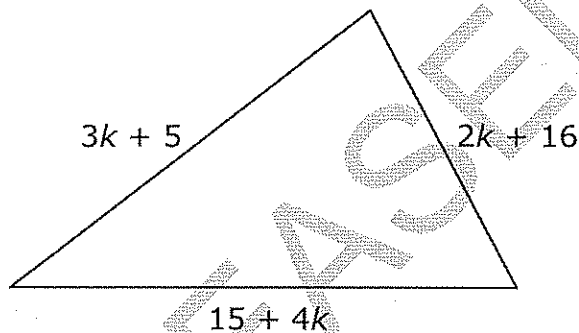
- A 3 units
- B 6 units
- C 8 units
- D 13 units



40 Which choice is equivalent to the expression $4(x + 2y)$?

- A $4x + 8y$
- B $4x + 2y$
- C $x + 8y$
- D $8xy$

41 Which expression represents the perimeter of the triangle?



- A $9k + 36$
- B $10k + 25$
- C $20k + 25$
- D $24k + 36$

42 The length of a rectangle is 6 units longer than the width, w . Which choice is a correct expression for the perimeter of the rectangle?

- A $2w + 6$
- B $2w + 12$
- C $4w + 6$
- D $4w + 12$



43 Jane wants to visit her sister.

- Her car travels x miles per gallon of gas.
- She will travel 1,000 miles to her sister's house.
- Gas costs \$3.50 per gallon.

Which expression shows how much Jane will spend for gas on the trip to her sister's house?

A $1,000(3.50x)$

B $3.50\left(\frac{1,000}{x}\right)$

C $3.50\left(\frac{x}{1,000}\right)$

D $1,000\left(\frac{1}{3.50x}\right)$

44 Suppose that a stove and a freezer together weigh at least 370 pounds. The weight of the stove is 170 pounds. Which inequality correctly describes these conditions for the weight of the freezer, f ?

A $f \geq 200$

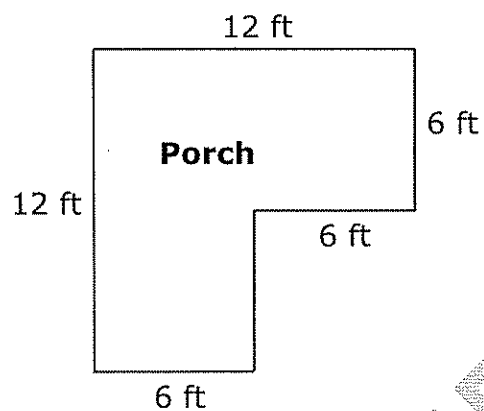
B $f > 200$

C $f \leq 200$

D $f < 200$



- 45 The Wilsons want to put outdoor carpet on their porch.



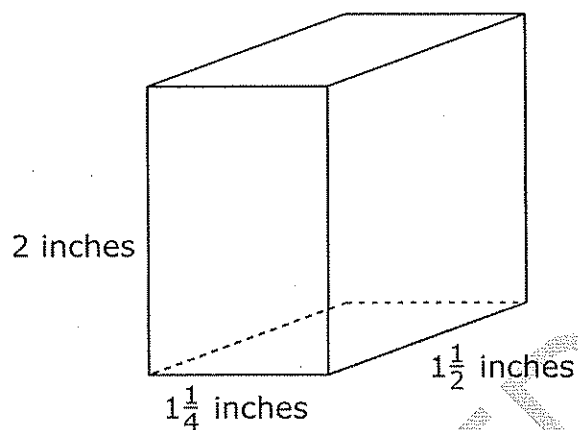
How much carpet will be needed for their porch?

- A 42 ft²
- B 72 ft²
- C 108 ft²
- D 144 ft²

RELEASED



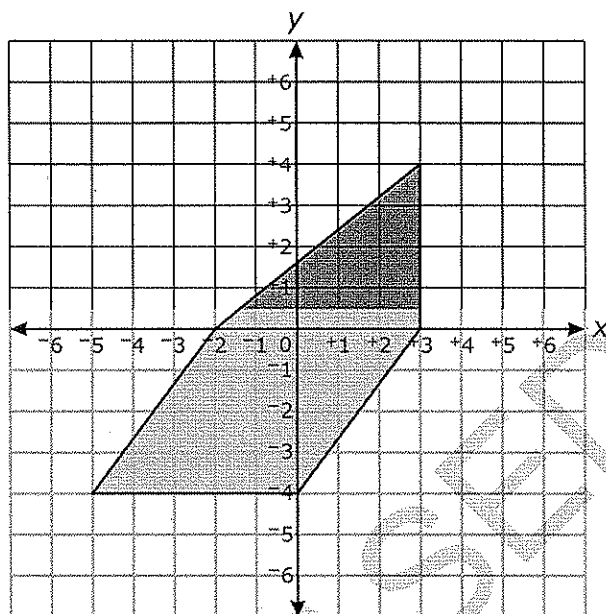
- 46 What is the volume of the right rectangular prism below?



- A $4\frac{3}{4}$ cubic inches
 B $4\frac{1}{8}$ cubic inches
 C $3\frac{3}{4}$ cubic inches
 D $2\frac{1}{8}$ cubic inches



- 47 In the graph below, each grid square represents one square yard.

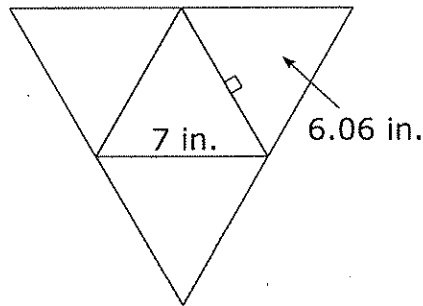


What is the area of the shaded figure?

- A 20 yd²
- B 30 yd²
- C 36 yd²
- D 40 yd²



- 48 Abby is making a decoration. When folded, the decoration is a triangular pyramid made of four congruent equilateral triangles. **Approximately**, what is the surface area of Abby's decoration?



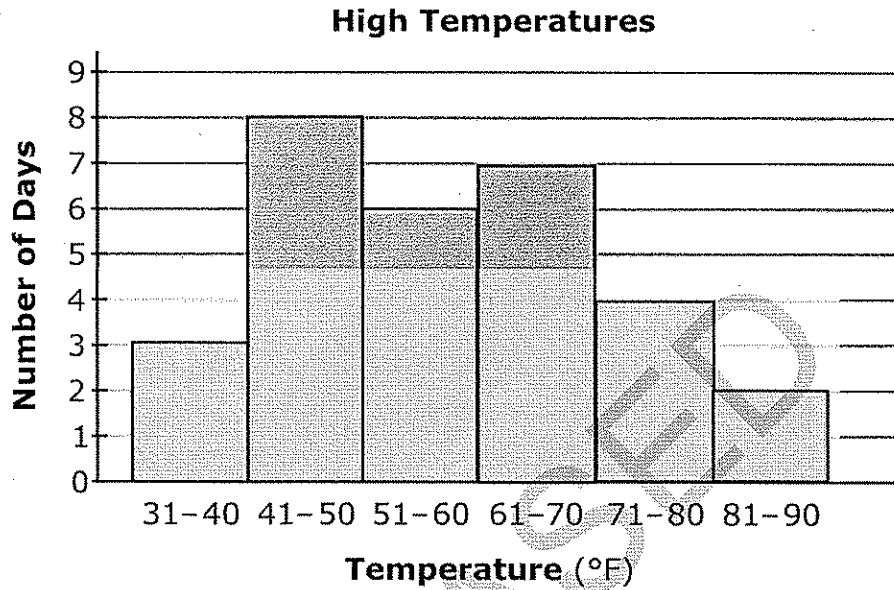
- A 64 in.²
- B 85 in.²
- C 97 in.²
- D 170 in.²

- 49 Katherine earned 84, 92, 84, 75, and 70 on her first 5 tests. What is the minimum grade Katherine needs to earn on the next test to have a mean of 84?

- A 81
- B 84
- C 95
- D 99



- 50 The weather station recorded the high temperature each day for 30 days. The graph of the temperature data is shown below.



In which interval is the median temperature?

- A 41-50
- B 51-60
- C 61-70
- D 71-80



Directions:

This is the end of the mathematics test.

- 1. Put all of your papers inside your test book and close your test book.**
- 2. Place your calculator on top of the test book.**
- 3. Stay quietly in your seat until your teacher tells you that testing is finished.**

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